UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,597	11/18/2003	Shigeru Horikawa	500.43289X00	2947

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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/714,597	HORIKAWA, SHIGERU
	Examiner	Art Unit	
	KENNETH TANG	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 January 2008_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-10_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-10_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _18 November 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _1/7/08, 11/18/03_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-10 are presented for examination.

Information Disclosure Statement

2.   The information disclosure statement filed 1/7/08 fails to comply with 37 CFR 1.98(a)(3)

because it does not include a concise explanation of the relevance, as it is presently understood

by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the

information, of each patent listed that is not in the English language. It has been placed in the

application file, but the information referred to therein has not been considered.

Certain non-English documents that were cited were not considered by the Examiner (see

1449). For non-English documents that are cited, the following must be provided:

(a)   A concise explanation of the relevance, as it is presently

understood by the individual designated in 37 CFR 1.56(c) most

knowledgeable about the content of the information, unless a complete

translation is provided; and /or

(b)   A written English language translation of a non-English

language document, or portion thereof, if it is within the possession, custody or

control of, or is readily available to any individual designated in 37 CFR

1.56(c). After the examiner reviews the IDS for compliance with 37 CFR

1.97 and 1.98, the examiner should: (See MPEP § 609.05).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3.   Claim 10 is directed to non-statutory subject matter. In claim 10, the job scheduling management program is software, per se. Each of the functions in the body of the claim that make up the job scheduling management program is software, per se. A claim that is directed to software, per se, does not fall under one of the four statutory categories of inventions under 35 U.S.C 101. 35 U.S.C. 101 defines four categories of inventions that Congress deemed to be the appropriate subject matter of a patent: processes, machines, manufactures and compositions of matter. The latter three categories define "things" or "products" while the first category defines "actions" (i.e., inventions that consist of a series of steps or acts to be performed). See 35 U.S.C. 100(b) ("The term process' means process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.") (see MPEP 2106). Therefore, claim 10 is found to be non-statutory subject matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1, 3-5 and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by

Colle et al. (hereinafter Colle) (US 2004/0158568 A1).

5.   As to claim 1, Colle teaches a job scheduling management method for managing

schedules of jobs allocated to computers connected through a network (see Abstract, Fig. 1,

items 110, 115, 120, 125), comprising the steps of:

monitoring an operating state of a computer to which said jobs have been allocated, of

said computers (utilization or availability, etc.) Fig. 1, item 145, page 3, [0033], page 1, [0008]

and [0009], page 11, [0113]);

determining if said operating state meets a predetermined condition (alerted by utilization

exceeding a certain threshold percentage, for example) (page 11, [0114], page 1, [0011]);

if said operating state meets said predetermined condition, detecting the job uncompleted

at a timing when said predetermined condition is met, of said jobs allocated to said computer

(task items that need to be completed as part of performing a service action) (see Abstract, page

11, [0114], [0116], [0121], lines 1-5);

detecting another computer that is available to execute said detected uncompleted job

(task items that need to be completed), of said computers, based on information concerning

resources required for executing said detected uncompleted job (scheduling based on availability

information of resources) (page 1, [0008], see Abstract); and

allocating said detected uncompleted job to said detected other computer (scheduling available resource to execute task items that need to be completed) (see Abstract, page 2, [0016]).

6.   As to claim 3, Colle teaches a job scheduling management method in a management computer for allocating jobs to a plurality of computers connected through a network and managing a schedule of each of said jobs (see Abstract, Fig. 1, items 110, 115, 120, 125), comprising the steps of:

managing first information indicating correspondence between said job and said computer to which said job is allocated, second information indicating one or more resources required for executing said job, and third information indicating one or more resources to be used by each of said computers (Fig. 1, item 150, 130, etc., [0028], [0029]);

monitoring an operating state of each of said computers to which said job is allocated (utilization or availability, etc.) Fig. 1, item 145, page 3, [0033], page 1, [0008] and [0009], page 11, [0113]);

determining if said operating state meets a predetermined condition (alerted by utilization exceeding a certain threshold percentage, for example) (page 11, [0114], page 1, [0011]);

detecting an uncompleted job among said jobs allocated to said computers using said first information (task items that need to be completed as part of performing a service action) (see Abstract, page 11, [0114], [0116], [0121], lines 1-5, Fig. 1, items 150, 130);

extracting one or more resources required for executing said detected uncompleted job

using said second information (scheduling based on availability information of resources) (page

1, [0008], see Abstract, Fig. 1, items 150, 130);

extracting another computer among said plurality of computers that is available to use

said extracted resources using said third information (scheduling based on availability

information of resources) (page 1, [0008], see Abstract, Fig. 1, items 150, 130, 120, 125, etc.);

and

allocating said detected uncompleted job to said extracted other computer (scheduling

available resource to execute task items that need to be completed) (see Abstract, page 2,

[0016]).

7.   As to claim 4, Colle teaches wherein when allocating said detected uncompleted job to

said extracted other computer, said job and the other jobs having been already allocated to the

other computer are rescheduled (page 13, [0135]).

8.   As to claim 5, Colle teaches a job scheduling management method as claimed in claim 3,

further comprising the steps of:

when allocating said detected uncompleted job to said extracted other computer,

detecting an uncompleted job of said jobs having been already allocated to said extracted another

computer using said first information (dynamic scheduling and rescheduling wherein the

scheduler is modified dynamically) (page 13, [0135]);

extracting one or more resources required for executing said detected uncompleted job of

said computer using said second information (scheduling based on availability information of

resources) (page 1, [0008], see Abstract, Fig. 1, items 150, 130);

extracting further computer that is available to use said extracted resources for said

another computer using said third information (scheduling based on availability information of

resources) (page 1, [0008], see Abstract, Fig. 1, items 150, 130, 120, 125, etc.); and

allocating said detected uncompleted job to said extracted further computer (scheduling

available resource to execute task items that need to be completed) (see Abstract, page 2,

[0016]).

9.   As to claim 8, Colle teaches a job scheduling management method as claimed in claim 3,

wherein when allocating said detected uncompleted job to said extracted other computer, said

detected uncompleted job is allocated to a plurality of other computers among said plurality of

computers according to one or more resources required for executing said job (dynamic

scheduling and rescheduling wherein the scheduler is modified dynamically and scheduling

based on availability information of a plurality of resources) (page 13, [0135], page 1, [0008],

see Abstract, Fig. 1, items 150, 130, 120, 125, etc.).

10.   As to claim 9, Colle teaches a job scheduling management computer for allocating jobs to

a plurality of computers connected through a network and managing schedules of said jobs,

comprising (see Abstract, Fig. 1, items 110, 115, 120, 125):

management means for managing information indicating that a first job is allocated to a

first one of said computers and a second job is allocated to a second one of said computers (page

2, [0016], page 5, [0055], lines 12-24));

monitoring means for monitoring an operating state of said first computer (Fig. 1, item

145, age 3, [0033]); and

rescheduling means for re-allocating said first job allocated to said first computer into

said second computer and said second job allocated to said second computer to a third one of

said computers with respect to information managed by said management means in accordance

with an instruction given from said monitoring means (page 13, [0135]).

11.   As to claim 10, it is rejected for the same reasons as stated in the rejection of claim 3.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12.   Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colle et al. (hereinafter Colle) (US 2004/0158568 A1) in view of Bigus et al. (hereinafter Bigus) (US 7,124,119 B2).

13.   As to claim 2, Colle teaches determining CPU usage rates/percentages and using them to take into consideration the distribution of tasks. However, Colle is explicitly silent in teaching the determination of how many times a usage rate of CPU in the computer exceeds a predetermined usage rate. Bigus teaches monitoring and detecting metrics of CPU usage, job details, etc. and provides warnings for when jobs exceed thresholds so that problems/unfinished jobs can be determined (col. 6, lines 44-56). It would have been obvious to one of ordinary skill in the art to modify Colle's job monitoring system such that it would include the features of determining how many times a usage rate of CPU in the computer exceeds a threshold. The suggestion/motivation would have been to provide the predicted result of being able to efficiently identify and characterize information considered to be relevant in solving the problem detected. After identification based on the examination of different metrics such as mentioned above, different intelligent agents could be applied to solve the problem (see col. 6, lines 36-67, Abstract, col. 2, lines 24-45). Therefore, it would have been obvious to combine Colle and Bigus to obtain the invention of claim 2.

14.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colle et al. (hereinafter Colle) (US 2004/0158568 A1) in view of Hinsley (GB 2293675 A).

15.   As to claim 6, Colle is silent wherein said management computer allocates one or more

jobs to itself. However, Hinsley teaches a computer network interconnecting processors as

nodes in the network for performing processes and determining whether itself or neighboring

nodes are better to perform the process based on who has the highest ratings (see Abstract, page

1, lines 21-28 through page 2, line 1). It would have been obvious to one of ordinary skill in the

art at the time the invention was made to modify Colle's process/job allocation system such that

it could include the possibility of allocating one or more jobs to itself. The

suggestion/motivation for doing so would have been to provide the best node to perform the

execution in the situation where itself is the best one and an improved means of allocating

processors to be performed in the most efficacious manner (see Abstract, page 1, lines 16-20).

Therefore, it would have been obvious to combine Colle and Hinsley to obtain the invention of

claim 6.

16.   **Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colle et al.**

(hereinafter Colle) (US 2004/0158568 A1) in view of Tanaka (US 2003/0074387 A1).

17.   As to claim 7, Colle teaches wherein said management computer further manages

information indicating correspondence between said job and a time when said job is to be

finished and information indicating a time passed in executing said job, and allocating the

uncompleted job of said jobs allocated to said computer to another computer if predetermined

conditions are not met (see rejection of claim 3 above). Colle is silent in predicting that said job

is not finished in the time expected. Tanaka teaches distributing jobs based on predicting a

completion time of the jobs (see Abstract, [0023]). One of ordinary skill in the art would have

known to modify Colle's job distribution such that it would take into consideration the prediction

of the job completion time. The suggestion/motivation for doing so would have been to provide

the predicted result of being able to adjust the job allocation in accordance with circumstances

such as not being able to finish within the time expected (page 2, [0024]). This allows for

efficient distribution of jobs loaded in the system. Therefore, it would have been obvious to one

of ordinary skill in the art to combine Colle and Tanaka to obtain the invention of claim 7.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure:

- **Dwork et al. (US 5,513,354)** discloses a crash fault tolerance management

   method for allocating tasks among processors by exchanging views between

   operational processors to reach consensus as to the status of previously allocated

   tasks. Crash failures (jobs incomplete) are identified and those tasks are

   reallocated efficiently (see Abstract).

- **Akamatu et al. (US 7,036,041 B2)** discloses a transaction processing system

   which specifies a business to be performed after disaster recovery based on a

   previous business failure. The system reconfigures the execution schedule (see

   Abstract).

- **Aoyama et al. (JP 09237256 A)** discloses a dynamic load dispersion method for real time parallel computers involving scheduling tasks by judging whether tasks requested is processed within a completion time frame. When the task is not completed within the predefined time frame in the processor, the assigned task is then scheduled to another processor (see Abstract).

- **Meguro (JP 08297643 A)** discloses a load distribution method for a multi-processor system providing distinct processing loads to several CPUs with different processing capabilities based on processing frequency of processing demand needed to complete the processing routine (see Abstract).

- **Akiyama (JP 2002108839A)** discloses a networking system that assigns jobs to a selected processor based on usage situation information of the processor and conditional information of the job when the job fails or a new job is input (see Abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH TANG whose telephone number is (571)272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number: 10/714,597   Page 13
Art Unit: 2195

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth Tang/
Examiner, Art Unit 2195

/Li B. Zhen/
Primary Examiner, Art Unit 2194